



Specialty Fibre for Component

Photonic Single-mode Fibre Series for Component (PH-SMF)

YOFC photonic single-mode fibres are specially developed for optical components with strict requirement for bending resistance properties. The fibres are manufactured by PCVD process with Ge/F co-doped material system and special waveguide structure. The fibres have tight geometric and optical specifications. They are compatible with G.652 fibre and has excellent macro-bending performance which makes it very appropriate for the mini components. The fibres meet the standards of ITU-T G.657.A1/G.657.A2/G.657.B3 and suits full range applications from 1260nm to 1625nm.

The Ge/F co-doped material system, design provides excellent macro-bending attenuation and good fused-taper performance. The macro-bending performance of PH1011-C and PH1012-A has been significantly improved with special "trench" waveguide structure and meets the requirements of G.657.A2 and G.657.B3 standards. PH1012-A is specially developed for very small bending radius and compact components and modules in C band with excellent bending resistance.

Characteristics

- Tighter geometric and optic specifications
- Excellent splicing performance
- Excellent compatibility with the G.652 fibre
- Excellent macrobending resistance
- Excellent microbending resistance
- High reliability enhanced by 200kpsi

Applications

- Bending sensitive condition/mini component
- Pigtails/Patch cords
- Connectors
- Couplers
- Miniaturized integrated erbium-doped fibre amplifier (EDFA)
- DWDM Components

Standards

- YOFC PH-SMF meet or exceed the ITU-T G.657 and IEC60973-2-50

Specifications

Fibre Type	PH 9/125-13/250A	PH 9/125-13/250C	PH 9/125-13/200	PH 9/125-14/250	PH 9/125-14/250+	PH 9/125-14/200+	PH 8/125-14/250	PH 8/125-14/250B	PH 8/80-12/165		
Part No.	PH1010-A	PH1010-C	PH1010-D	PH1011-A	PH1011-C	PH1011-D	PH1012-A	PH1012-B	PH1012-C		
Ref.Standards	G.652.D	G.657.A1	G.652.D	G.657.A1	G.657.A2	G.657.A2	G.657.B3	G.657.B3	G.657.B3		
Optical Properties											
Attenuation	@1310 (dB/km)	≤0.35	≤0.35	≤0.35	≤0.35	≤0.35	≤0.35	≤0.35	≤0.35	≤0.40	
	@1383 (dB/km)	≤0.35	≤0.35	≤0.35	≤0.35	≤0.35	≤0.35	≤0.35	≤0.35	-	
	@1550 (dB/km)	≤0.20	≤0.20	≤0.20	≤0.20	≤0.21	≤0.21	≤0.22	≤0.22	≤0.30	
	@1625 (dB/km)	≤0.24	≤0.24	≤0.24	≤0.24	≤0.24	≤0.24	≤0.24	≤0.24	-	
Fibre Cut-off Wavelength (nm)	≤1310	≤1310	≤1260	≤1310	≤1310	≤1310	≤1460	≤1310	≤1430		
Mode-field Diameter	@1310 nm (μm)	8.7 - 9.5	8.4 - 9.2	8.7 - 9.5	8.4 - 9.2	8.4 - 9.2	8.4 - 9.2	8.2 - 9.0	8.2 - 9.0	8.2 - 9.0	
	@1550 nm (μm)	9.9 - 10.9	9.3 - 10.3	9.9 - 10.9	9.3 - 10.3	9.3 - 10.3	9.3 - 10.3	9.1 - 10.1	9.1 - 10.1	9.1 - 10.1	
Geometrical Properties											
Clad Diameter (μm)	124.7±0.5	124.7±0.5	125.0±0.7	124.7±0.5	124.7±0.5	124.7±0.5	124.7±0.5	124.7±0.5	124.7±0.5	80.0±1.0	
Non-circularity of Cladding (%)	≤0.5	≤0.5	≤0.7	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.7	
Coating Diameter (μm)	240.0±5.0	240.0±5.0	200.0±5.0	240.0±5.0	240.0±5.0	240.0±5.0	195.0±5.0	240.0±5.0	240.0±5.0	165.0±7.0	
Core/Cladding Concentricity (μm)	≤0.3	≤0.3	≤0.5	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤0.5	
Coating/Cladding Concentricity (μm)	≤8	≤8	≤8	≤8	≤8	≤8	≤8	≤8	≤8	≤12	
Curl (Radius)(m)	≥4	≥2	≥2	≥4	≥4	≥4	≥4	≥4	≥4	≥2	
Macrobend Properties											
Radius	Turns	Wavelength (nm)	Induced Loss(dB)								
10 mm	1	1550	-	≤0.5	-	≤0.5	≤0.1	≤0.1	-	≤0.03	≤0.03
10 mm	1	1625	-	≤1.5	-	≤1.5	≤0.2	≤0.2	-	≤0.10	≤0.10
7.5 mm	1	1550	-	-	-	-	≤0.2	≤0.2	≤0.03	≤0.08	≤0.08
7.5 mm	1	1625	-	-	-	-	≤0.5	≤0.5	≤0.15	≤0.25	≤0.25
5 mm	1	1550	-	-	-	-	-	-	≤0.05	≤0.15	≤0.15
5 mm	1	1625	-	-	-	-	-	-	≤0.15	≤0.45	≤0.45
Mechanical Properties											
Proof Test(kpsi)	Off-line	100/200	100/200	100/200	100/200	100/200	100/200	100/200	100/200	100/200	
Environmental Properties											
Test Item	Condition	1310nm, 1550nm and 1625nm Additional Attenuation (dB/km)									
Temperature Cycle (°C)	-60 to +85	≤ 0.05									

*200μm outer diameter fibre is available

*The measurement of fibre cut-off wavelength is testing 2.0 ± 2.0m length fibre by the multi-mode reference method specified in IEC 60793-1-44

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